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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/571,266	03/09/2006	Yasushi Sasaki	060212	6102
23850 7590 08/04/2010 KRATZ, QUINTOS & HANSON, LLP 1420 K Street, N.W. 4th Floor WASHINGTON, DC 20005				
EXAMINER				
CHAWLA, JYOTI				
ART UNIT		PAPER NUMBER		
1781				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/571,266

Applicant(s)

SASAKI ET AL.

Examiner

JYOTI CHAWLA

Art Unit

1781

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 7-16 is/are pending in the application.
- 4a) Of the above claim(s) 10-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 7-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/22)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's submission filed on May 12, 2010 has been entered as compliant. Claims 3-6 have been cancelled, claim 1 has been amended in the current application. Claims 1, 7-16 are pending, claims 10-16 remain withdrawn for being directed to non-elected invention and elected claims 1, 7-9 are examined in the current application.

Claim Rejections - 35 USC § 112

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Rejection of claims 1-9 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim "heating gum arabic in such a manner that the loss-on-drying is not more than 3%, or heating gum arabic in dry state that the loss-on-drying is not more than 3%." Have been withdrawn based on applicant's amendments to claims of 5/12/2010.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Rejection of claims 1, 3-9 for being unpatentable over Inata in view of Whistler made in the office action of 3/18/2010 has been withdrawn based on applicant's amendments and arguments.

A) Claims 1, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikuine et al (JP 2000-166489 and translation), hereinafter Ikuine in view of the combination of Industrial gums by Whistler et al (page 205), hereinafter Whistler and Walter et al (US 5476678), herein after Walker.

Evidentiary reference "Particle Size Conversion" Standard sieve sizes obtained from: <http://www.sigmaaldrich.com/chemistry/stockroom-reagents/learning-center/technical-library/particle-size-conversion.html>

Regarding amended **claims 1, 8 and 9**, Ikuine discloses a method for producing modified gum arabic (for example see translation, page 4, line 3), the method comprising the step of heating dried gum arabic (for example see translation, page 4, line 3 where Ikuine teaches of heating gum arabic in solid state, i.e., dry or undissolved state), wherein the gum arabic is heated at a temperature of 90°C to 180°C (for example, see translation, page 4, lines 10-14) and at reduced pressure (see translation, page 4, lines 23-24, page 7, lines 1-3). Ikuine further indicates that said modified gum arabic has suppressed discoloration when heated under reduced pressure and exhibits a superior emulsification power (for example, see translation, page 4, lines 4-5, Page 8, paragraph 0009, lines 3-4, comparative examples, Table 1 and paragraph 17 on page 11) as claimed.

Regarding the limitation of particle size of dried gum arabic as recited in **claim 1** and spray-dried gum arabic in **claim 7**, Ikuine discloses that raw material gum arabic is secrete obtained from the trunk of the legume Acacia or species of the same genus and the "raw material gum arabic can be in the form of a commercially available powder, granules or other such gum arabic" (translation, page 5, paragraph 5, lines 13-18). Ikuine is silent about the limitations of particle size and method of obtaining the

powdered gum arabic including "an average particle diameter of not more than 1.5 mm" as disclosed in claim 1 and "spray dried" in claim 7. However, spray-dried gum arabic was known and available at the time of the invention, e.g., Whistler discloses that spray dried powder of various grades (sizes), including the spray dried, filtered, heat treated and purified gum Arabic product was known and available (Page 205, last paragraph) at the time of the invention. Regarding the specific size of the particles of spray dried powders Walter utilizes a spray dried gum arabic in confectionery, where "98% of ...gum arabic will pass through a #80 US Standard sieve" (Walter, Column 5, lines 25-30). Further it is noted that a #80 US Standard sieve has an opening of 0.177mm (as evidenced by Particle size conversion reference). Since 98% of gum arabic particles as taught by Walter fall below 0.177 mm, therefore, Walter's average particle diameter for gum arabic will also fall below 0.177mm which overlaps with applicant's recited range of "not more than 1.5 mm". Thus, one of ordinary skill in the art at the time of the invention had knowledge of gum arabic powders that were spray dried and having average particle sizes overlapping the claimed gum arabic particles, as taught by Whistler and Walter. Therefore, it would have been well within the purview of one of ordinary skill in the art at the time of the invention to modify Ikuine and choose a fine spray-dried powder of dried gum arabic in order to perform the heat treatment under reduced pressure. One of ordinary skill in the art would have been motivated to choose a fine spray dried powder of gum arabic at least a for the purpose of modifying gum arabic powder in a size range which may be most readily usable in foods, such as, confections with minimal further processing or pretreatment as taught by Walter (Column 2, lines 56-60).

Further, regarding the overlapping of ranges between the invention and prior art composition it is noted that in the case where the claimed ranges "overlap or lie inside the ranges disclosed by the prior art" a prima facie case of obviousness exists (In re Wetheim, 541 F2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990)).

Regarding the limitation of "heating gum arabic having a loss-on-drying of not more than 3%" as recited in independent **claim 1**, applicants' disclose loss-on drying as "the term "loss-on-drying" used herein denotes the amount of moisture loss (% by weight) when the target gum arabic is dried by heating at 105°C for 6 hours, and is usually used as an indication of the moisture content of gum arabic, in other words, the dry degree of gum arabic. The loss-on-drying of the gum arabic is preferably not more than 3%. The fact that gum arabic has a loss-on-drying of not more than 3% denotes that the moisture content of the gum arabic is reduced by not more than 3% by weight when the target gum arabic is dried by heating at 105°C for 6 hours, taking the weight of gum arabic before drying by heating as 100% by weight." (Page 8, Lines 9-25). Ikuine discloses a loss on drying of 15% or less from heat treatment as claimed (translation, page 5, paragraph 5, lines 11-13), which overlaps applicants' claimed range of a loss-on-drying of 3% or less. Regarding the overlapping of ranges between the invention and prior art composition it is noted that in the case where the claimed ranges "overlap or lie inside the ranges disclosed by the prior art" a prima facie case of obviousness exists (In re Wetheim, 541 F2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990)).

In addition, Ikuine teaches of heating gum arabic in solid state (Translation, page 5, line 3) and is also concerned with prevention of discoloration and enhancing emulsification properties of gum arabic after heat treatment along with loss of moisture and its effect on the emulsification property of the resulting product (for example, see translation Page 5, last 2 lines and page 6, lines 1-4), as claimed. Further, it is noted that heat treatment temperature as taught by Ikuine also overlaps with the recited range of the applicant and Ikuine also uses substantially the claimed process conditions including reduced pressure. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that for a given starting material or raw gum arabic having particle size and moisture content, employing the heat treatment under reduced pressure by the method taught by Ikuine will yield loss-on-drying of gum arabic in the range that will be similar to loss-on-drying of gum arabic product as instantly

claimed. Further, applicants are reminded that where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Response to Arguments

Applicant's arguments filed May 12, 2010 have been fully considered but are moot in view of the new ground(s) of rejection.

Applicants' remarks regarding the process steps are still relevant and have been considered but have not been found persuasive. JP reference 2000-166489 A to Ikuine with new translation is the same reference as applied previously in the application as 2000-166489 A to INATA et al with machine translation.

i) Applicant's remark that "Gum arabic of the present invention cannot be obtained by heating at normal pressure, even if the gum arabic is dried at reduced pressure prior to heating. In particular, even though the loss-on-drying of samples 3-1 to 3-5 is not more than 3 %, all these samples displayed significant browning and caking." (Remarks, page 6, last line to page 7, lines 1-4), has been considered but is not persuasive. In response applicant is referred to Ikuine translation, page 4, line 3 where Ikuine teaches of heating gum arabic in solid state, i.e., dried or undissolved state, wherein the gum arabic is heated at a temperature of 90°C to 180°C (for example, see translation, page 4, lines 10-14) and at reduced pressure (see translation, page 4, lines 23-24, page 7, lines 1-3).

ii) Applicant's remark about reference JP 2000-166489, Ikuine (translation), stating that the reference "teaches neither a method for producing modified gum arabic,

comprising the step of heating dried gum arabic having a loss-on-drying of not more than 3% at a reduced pressure, wherein the gum arabic to be heat treated has an average particle diameter of not more than 1.5 mm, nor a modified gum arabic obtained by said method" recites amended claim 1, which has been responded in the rejection above.

iii) Regarding applicant's remark that JP 2000-166489 to Ikuine (previously Inata et al.) "neither teaches nor suggests an average particle size of not more than 1.5 mm, let alone any of the superior characteristics of a modified gum arabic that results therefrom." (Remarks, page 8, paragraph 2 to Page 9, line 5). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In the instant case Ikuine discloses that "raw material gum arabic can be in the form of a commercially available powder, granules or other such gum arabic" (translation, page 5, paragraph 5, lines 13-18). Ikuine, however, is silent about the limitations of particle size and method of obtaining the powdered gum arabic including "an average particle diameter of not more than 1.5 mm." as disclosed in claim 1 and "spray dried" in claim 7. Whistler discloses that spray dried powder of various grades (sizes), including the spray dried, filtered, heat treated and purified gum arabic product was known and available (Page 205, last paragraph) at the time of the invention. Walter has been relied on to show the conventionality of spray dried gum arabic in where average particle size is below 0.177 mm, i.e., particle size in the claimed range (Walter, Column 5, lines 25-30). Thus, one of ordinary skill in the art at the time of the invention had knowledge of gum arabic powders that were spray dried and having average particle sizes overlapping the claimed gum arabic particles, as taught by Whistler and Walter. Therefore, it would have been well within the purview of one of ordinary skill in the art at the time of the invention to modify Ikuine and choose a fine spray dried powder of dried gum arabic in order to perform the heat treatment under reduced pressure. One of ordinary skill in the art

would have been motivated to choose a fine spray dried powder of gum arabic at least a for the purpose of modifying gum arabic powder in a size range which may be most readily usable in foods, such as confections with minimal further processing or pretreatment as taught by Walter (Column 2, lines 56-60).

iv) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., browning or caking as stated in remarks, page 8, last 2 lines) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

v) On page 7, last paragraph, applicant states that some data regarding "it has been erroneously omitted to specify in experimental Example 2 and Table 4 of the present application that the heat treatment of the samples shown in table 4 has also been conducted under reduced pressure", however, applicant has not submitted any amendments to specification to this effect. Nevertheless, even if such an amendment to the specification is submitted, it would be subject to objection under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JYOTI CHAWLA whose telephone number is (571)272-8212. The examiner can normally be reached on 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jyoti Chawla/
Examiner, Art Unit 1781